Johnson 1996d

STREAMS: Slide Creek Drainage

DRAINAGE: East Fork Jarbidge River

GAWS COMPUTER NOS.:

Slide Creek	170501	05	155	035	025	020	
Gods Pocket Cr.	"	"	"	"	"	"	,005
Unnamed (Trib.A)	"	"	"	"	"	"	,010
Unnamed (Trib.B)	"	"	"	"	"	"	,025

SURVEY DATES: July 27,28,29 and August 2,3,4,9,and 10, 1993

REPORT DATE: March 29, 1996

WRITTEN BY: Gary Lee Johnson

SURVEY METHODOLOGY: The United States Forest Service Region 4, Level III Fisheries Habitat Survey Method (March, 1989) was utilized at seven Sample Sites (SS's) on Slide Creek, at five SS's on Gods Pocket Creek , at three SS's on an unnamed tributary (Trib. A) and at two SS's on another unnamed tributary (Trib. B). Each SS was preplotted on the United States Geological Survey, 7½ minute topographic maps of the area prior to entering the field.

Upon locating a SS, a ¼-inch mesh block net was placed in the stream to serve as a barrier to downstream fish movement. The 100 feet of stream above the net at each SS was sampled for fish using a one pass effort with a Dirigo backpack electroshocker. Captured trout were measured (fork length), weighed, and returned to the stream following electrofishing.

Aquatic macroinvertebrate type and relative abundance were assessed visually, using random substrate inspection at each SS. The first of five habitat transects began at the end of each fish sample area. Additional transects were placed at 50 foot intervals. Stream discharge was calculated by using timed float velocity measurements and water width and depth measurements over a uniform length of stream. Both air and water temperatures were recorded at each SS with the use of a hand held thermometer.

LAND STATUS AND ACCESS: The entire Slide Creek drainage lies within the Jarbidge Wilderness Area of the Humboldt National Forest. A wilderness trail follows the entire length of Slide Creek and can be accessed from a road near Pole Creek Ranger Station located 14 miles south of Murphy Hot Springs, Idaho. Slide Creek can also be accessed from other Wilderness trailheads located west of the East Fork Jarbidge River with road access to either the town of Jarbidge or Murphy Hot Springs.

WATERSHED DESCRIPTION: Slide Creek is a 5.4 mile long northwesterly flowing second order tributary to the East Fork of the Jarbidge River. Gods Pocket Creek is a 3.9 mile long, north flowing, first order tributary that enters Slide Creek about 1.8 miles upstream of the river confluence. Tributary A is a 1.46 mile long, first order stream that enters the mainstem of Slide Creek about 1.0 mile upstream of where Gods Pocket Creek joins.

Tributary B is a 1.15 mile long first order stream (below the juncture of several headwater forks) that enters Slide Creek, 0.7 miles upstream of Trib. B confluence. The head drainage of Slide Creek is a relatively flat area bounded by elevations ranging from 8562 feet to the 9031 foot terminus of Bieroth Ridge that separates Slide Creek from Robinson Creek drainage to the north. Gods Pocket Peak at the head of Gods Pocket Creek drainage is 10.185 feet high. A north-south trending ridgeline separates Gods Pocket Creek drainage from the East Fork Jarbidge River. Surveyed unnamed tributaries drain from peak elevations of 9678 feet to 9223 feet.

The entire Slide Creek drainage area encompasses about 14.65 sq. mi. Individually, Tributary A and B drainages encompass 2.17 and 1.47 sq. mi. each, respectively. As long and narrow as it is, Gods Pocket Creek drainage includes only about 2.95 sq. mi. of area. The parent geology of the drainage is volcanic in origin (Million Scale Geologic Map of Nevada - 1977). All streams ran through relatively narrow, moderate to steep, V-shaped drainages. Mean drainage sideslope elevations above SS's on Slide Creek averaged 56 %. Valley bottom width along the mainstem ranged from 16 ft. to 138 ft. and averaged 63 ft. wide. A and B tributaries had mean valley bottom widths of 76 ft. and 40 ft., respectively. Valley sideslopes in Trib. A and Trib. B averaged 59 % and 54 %, respectively. Valley sideslopes in Gods Pocket Creek averaged 86 % and the valley bottom width ranged from 13 ft. at the upper three SS's and 59 ft. at the lower two SS's.

Upland vegetation consisted of fir, pine, aspen, juniper, mountain mahogany, rock spray, sagebrush, currant, rose, grasses and forbs.

WATER STATUS: The May, 1993 U.S. Soil Conservation Service, Snow Survey reported the Snake River Basin at an average of 135 % of normal (as % of normal water content). The maximum discharge along Slide Creek was 6.7 cfs, as measured at SS-2 on August 10, 1993. Slide Creek was a gaining stream due to the several tributary inflows along its length. Flowing at just 0.85 cfs at SS-7, Slide Creek gained as much as 1.48 cfs the accumulation of small drainage inflows before reaching SS-5 which had a discharge of 2.40 cfs. Tributary B contributed 1.0 cfs, Tributary A contributed 1.9 cfs, and Gods Pocket Creek contributed about 2.5 cfs. An unsurveyed small side tributary located between Trib.A and Trib.B also had a small flow during the survey period. All surveyed tributaries were gaining streams like Slide Creek. The Slide Creek water contribution to the river was probably about 6.1 cfs as determined from the average of SS-1 and SS-2 discharge estimates. Streamflows were estimated to be fast and at a "medium" stage during survey.

Riffle habitat encompassed an average of 61.6 % of the habitat transect widths in Slide Creek, 64.1 % in Trib.A and 91.8 % in Trib. B and 66.2 % in Gods Pocket Creek. Stream width to depth ratios ranged between 25 and 36. Stream channel width to water width ratios ranged from 1.57 to 1.90.

Mean water width and depth and maximum depths recorded in each stream are presented below in units of feet.

STREAM	MEAN WIDTH	MEAN DEPTH	MEAN MAXIMUM
Slide	8.9	0.30	0.76
Gods Pocket	6.4	0.18	0.64
Trib. A	7.2	0.24	0.59
Trib. B	4.0	0.16	0.44

Slide Creek stream temperatures ranged from a morning low of 48°F at S-4 to an afternoon high of 54°F at SS-3 and SS-7. Tributary stream temperatures all ranged between 38°F and 51°F. Stream clarity was noted as "clear" throughout the drainage.

STREAM HABITAT CONDITION INDEX (HCI): The average stream HCI scores (63.0, 60.4, and 63.5 percent of optimum) indicated "fair" overall trout habitat conditions in Slide Creek, Gods Pocket Creek, and Trib.A. The HCI in Trib.B averaged 55.9 % of optimum or "poor". Good HCI scores (73.6, 73.3, and 76.0 percent of optimum) were attained at Slide Creek SS-2 and SS-6, and at Gods Pocket Creek SS-1. The most limiting HCI parameter rating in the Slide Creek drainage was pool structure or in essence, the paucity of pools that are of a dimension greater than the stream is wide. Despite the low pool structure rating, there was at least one quality type pool in each of the 100 foot long electrofished sections of stream Slide Creek. Percent of optimum pool measure (50 % pool habitat = 100 % of optimum) was the second lowest rated HCI parameter within the drainage. Due to the rocky character of the tributary streams and high elevation streamside zones in general, the stream average rating for percent of optimum bank cover was only rated in the 50 's in the tributary streams. Stream average percent of optimum scores for stream bottom, bank soil stability and vegetative bank stability, all rated "good" to "excellent".

STREAM CHANNEL TYPE AND STABILITY: Slide Creek and tributaries were generally steep and as such, a Rosgen's A-2 type channel was the rule with the exception of an A-1 type at SS-3 on Gods Pocket Creek, and A-3 channel appearances at Gods Pocket Creek SS-2 and at SS-3 on Trib.A. Gods Pocket Creek was steepest among surveyed streams wherein, the gradient of the upper two miles of surveyed stream ranged from 16.0 % at SS-5 to 26.5 % at SS-3 and averaged 20.8 %. The gradient at the lower two SS's were similar and averaged 12.5 % over 1.15 miles (the topographic map calculated gradient over the same length of stream was about 10.0 %. The mean measured gradient of 1.5 miles of surveyed Trib.A was near constant and averaged 10.3 %. Trib.B was 4.5 % at SS-1 and 9.0 % at ss-2. Three miles of lower Slide Creek (SS-1 - SS-4) had a similar gradient that averaged 5.25 %. the gradient of the upper 2.2 miles of Slide Creek ranged from 8.5 % at SS-7 to 12 % at SS-6 and averaged 10.5 %.

Seventy-six percent of the Stream Channel Stability (SCS) scores at SS's rated "good" stability while 24 % or four SS's rated "fair" stability. Sixty percent of the SS's had "fair" to mostly "poor" ratings for vegetative bank protection. Scores for woody debris jam potential indicated that the potential for both volume and size to increase was evident at over 50 % of the SS's. Moderate to heavy amounts of woody debris were present at two SS-2 and SS-4 in Gods Pocket Creek and at SS-1 and SS-3 in Trib.A.

The streambottom in Slide Creek was composed of boulder (19%), rubble (43%), gravel (27%), sand/silt (6%), and bedrock (5%). Trib.A was similarly composed with the rubble and gravel percentages nearly transposed. Trib.B had fewer boulders and more rubble and gravel. The streambottom in Gods Pocket Creek was composed of boulder (18%), rubble (51%), gravel (24%), sand/silt (2 %), and bedrock (4 %).

RIPARIAN DESCRIPTION: All riparian tree community condition ratings were "good". The two, high elevation grass-forb riparian community SS's rated "fair" at Slide Creek SS-7 and "excellent" at Trib.A SS-3. The shrub dominated riparian communities at Slide Creek SS-2 and Gods Pocket Creek SS-3 rated "excellent" and "good", respectively. The lowest rated of riparian criteria was shrub density wherein, 6 of 15 tree/shrub SS' had a shrub density of less than 30 %. Ground cover was judged to be less than 60 % at Slide Creek SS-1, Gods Pocket Creek SS-3 through SS-5, and Trib.B SS-1. The lack of ground vegetation was due to the presence of bedrock/rock. A-2 type streams often allow only limited soil development for flood plain development and, instead a course rocky streambank exists.

Alder was the dominant overstory component along Slide Creek and at the lower end of the surveyed tributaries. Fir trees were present in the riparian zone at nine upper elevation SS's. Other riparian overstory components that were often associated with dominant types included aspen, cottonwood, willow, raspberry bushes, and/or dogwood. Forbs were the dominant understory component. Various grasses, sedges and/or equisetum were also noted. Streamside vegetation provided a good stream canopy averaging 64.5 % in Slide Creek, 49.5 % in Gods Pocket Creek, 54 % Trib.A, and 69.8 % in Trib. B.

HABITAT VULNERBILITY: The Index of Habitat Vulnerbility (HVI) to management activities averaged "moderate" in Slide Creek, "low to moderate" in Gods Pocket Creek, "moderate" in Trib.A and "moderate to high" in Trib.B. Slide Creek streambank sensitivity ratings as determined from the combined SCS scores for upperbank vegetative protection and lowerbank rock content averaged a score of 9 (6-13). Due largely to the amount of rock and bedrock along Gods Pocket Creek, the scores for upper bank vegetative protection were "poor" at the upper three SS's. Hence, the mean streambank sensitivity score for Gods Pocket Creek was 11.6 (6-16). The average sensitivity ratings for Trib.A and Trib.B were 9.3 (6-11) AND 10.5 (10-11), respectively. A bank sensitivity score of >13 indicates that one season of moderate livestock grazing can result in damaged streambanks. The fact that the SS's having "poor" upperbank

vegetative protection also had "good to excellent" lowerbank rock content, insures that ungulates would not likely cause much streambank damage.

The only portion of the Slide Creek drainage that livestock are permitted to graze, is above the Wilderness fenceline located about 300 meters above Slide Creek SS-7. A "light" amount (20 %) of ungulate streambank damage was noted through SS-7 due to cows having got through the fence in the recent past.

Substrate embeddedness ratings ranged from 0 in Trib.A to an average of 29.3 % in Slide Creek. The greatest amount of substrate embededness was seen at SS-1 in Slide Creek where it was an estimated 40 %.

FISH POPULATION: Rainbow/redband trout were captured at SS-1 in Trib.B and at every SS along Slide Creek except at SS-7. There were an estimated average of 166 rainbow/redband trout per mile throughout 5.0 miles of Slide Creek. There were only 53 rainbow/redband trout per mile in the lower 0.5 mile of Trib.B. The average size of 17 measured rainbow/redband trout was 109 mm (FL). What were identified as sub-catchable rainbow/redband trout (based on the capture of a similar sized rainbow/redband trout upstream of the sample area) were seen but not captured at SS-1 in Gods Pocket Creek. Due to a steep gradient in Gods Pocket Creek, fish probably only inhabit the lower 0.37 miles or so.

The two other species of fish captured in the drainage were sculpin in the lower 2.3 miles of Slide Creek at an average density of 211 per mile and bull trout at SS-3 in Slide Creek and at SS-1 in Trib.A and Trib.B. The single bull trout captured in Slide Creek was 153 mm (FL). The four captured bull trout (three others were seen but missed) in Trib.A ranged from 107 mm to 124 mm and averaged 116 mm (FL). The five captured bull trout in Trib.B were similarly sized and averaged 93 mm (FL). There appeared to be three age-classes of bull trout in the drainage. The total population of bull trout in the drainage may have included 44 in the mainstem and 317 sub-catchables in the surveyed tributaries. It may be that lower Gods Pocket Creek contains some younger aged bull trout as well due to its similar character to the lower surveyed tributaries. Electrofishing efficiency was deemed to be mostly good and ranged from fair to excellent.

ANGLER USE: Slide Creek receives light fishing pressure. Angler 10% Questionnaire data for the period 1980 through 1989 shows that only in 1987 did use occur (expanded use = 13 days). The remote location and close proximity of the East Fork Jarbidge River could explain the low fishing pressure on Slide Creek. According to file data, three anglers caught 28 rainbow trout after one hour of fishing on August 22, 1962. The angled trout ranged from about 4 to 10 inches and averaged about 7 inches long.

AQUATIC MACROINVERTEBRATES: Mayflies were occasional to abundant throughout the Slide Creek drainage. Mayfly family representatives noted included Heptageniidae, Baetidae, Siplonuridae and Ephemerellidae. Caddisfly larvae (stone cases, vegetation cases and free-living) were abundant to common throughout the drainage

except, at Gods Pocket SS-5 where they were absent. Perlid stonefly nymphs were rare to common at all sites except, at three SS's where they were not noted. Perlodidae stonefly nymphs were seen at three SS's. Planaria were occasional to abundant at all but the two lowest elevation SS's. Dipteran larvae and water mites were rarely seen at two SS's each. Water beetles were rare at the two lowest elevation SS's in Gods Pocket Creek. Moss/algae covered an average of 8 % of the habitat transects

BEAVER STATUS: The only sign of beaver activity was that of an occasional old cutting at five SS's on Slide Creek and at SS-1 on Trib.B. Inadequate amounts of willow and aspen steep stream gradients, and narrow valley bottoms would make the Slide Creek drainage unsuitable for beaver occupancy.

CONCLUSIONS

STREAM'S IMPORTANCE: Fall Creek supports fishable native populations of rainbow/redband trout and the much less common, bull trout.

RECOMMENDATION: Additional fish surveys could be conducted to better delineate the presence and extent of the bull trout population.

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GODS POCKET PEAK QUADRAN
NEVADA - ELKO CO.
7.5 MINUTE SERIES (TOPOGRAPI